

(19)



JAPANESE PATENT OFFICE

PATENT ABSTRACTS OF JAPAN

(11) Publication number: 02030790 A

(43) Date of publication of application: 01.02.1990

(51) Int. Cl. C25D 5/18  
C25D 5/20

(21) Application number: 63177879  
(22) Date of filing: 15.07.1988

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(54) METHOD FOR ELECTRODEPOSITING ALLOY

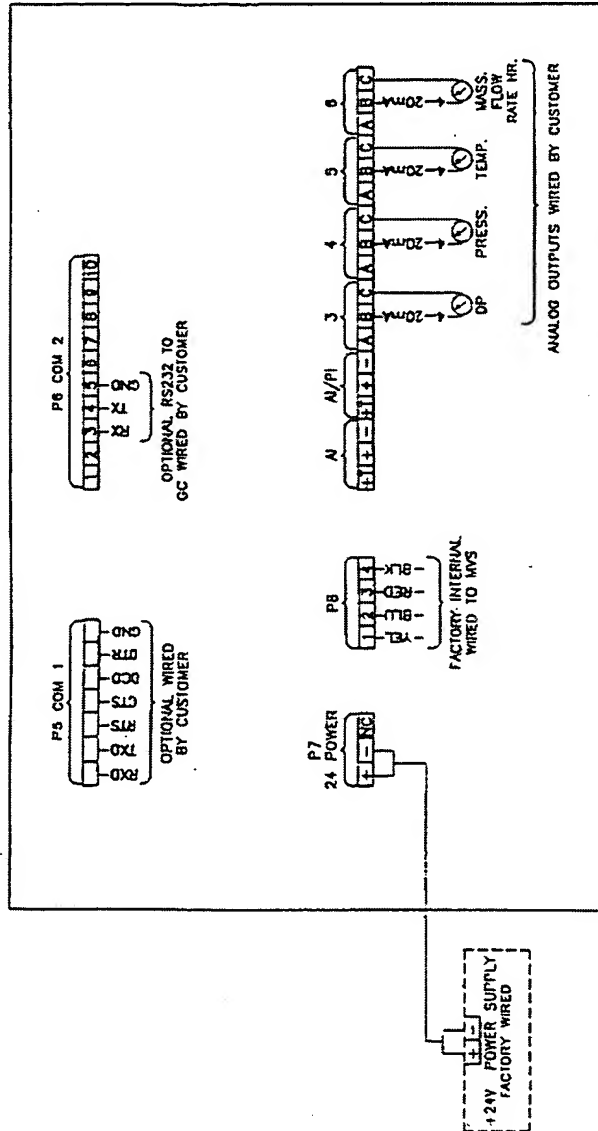
(57) Abstract:

**PURPOSE:** To enable the electrodeposition of an amorphous alloy coating film having satisfactory corrosion resistance by subjecting a plating bath contg. chlorides of an Fe family element and Cr, a complexing agent, a conductive salt and hypophosphite to pulse electrolysis or ultrasonic vibration.

**CONSTITUTION:** A plating bath contg. chlorides of one or more kinds of Fe family elements such as Fe, Co and Ni, Cr chloride, a complexing agent, a conduc-

tive salt and hypophosphite or further contg. a buffer is subjected to pulse electrolysis and/or ultrasonic vibration to electrodeposit an alloy. The desired duty cycle of the pulse electrolysis is  $\leq 0.05$  and the desired frequency of the ultrasonic vibration is about 20,000-50,000Hz. A diffusion layer is kept thin, the dispersion of ions is accelerated and the intrusion of org. matter from the complexing agent, the buffer, etc., into an electrodeposited alloy coating film is suppressed. The resulting amorphous Fe family element-Cr-P alloy film is nearly free from film defects and has satisfactory corrosion resistance.

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